

U.S. Serial No.: 10/725,503
Atty Docket: 740165-367
Amendment Dated December 27, 2004
Reply to Office Action October 6, 2004

REMARKS

The rejection of claims 1-3, 7-10 and 15 and 16 under 35 USC § 102(b) has been obviated by amending independent claims 1, 9 and 15 so that they more clearly distinguish the invention from the prior art of record. However, before the specific language of the Amendment is discussed, a brief recap of the principal features and advantages of the invention will be made so that the language used in the Amendment may be more fully appreciated.

As set forth in the "Background" section of the specification, the principal purpose of the invention is to eliminate the difference in the sound of the gear train within a mirror retracting mechanism when the gear train is rotated in one direction and the mirror is retracted, and when the gear train is rotated in the other direction and the mirror is extended. As set forth in the first full paragraph of page 5 of the specification, the invention stems from the Applicants' observation that such a sound difference occurs as a result of a tilting force being transferred from a first to a second gear. To solve this problem, the Applicants' invention interposes a tiltable coupling between the first and second gears of the gear train of the mirror retracting mechanism. The provision of such a tiltable coupling member prevents the tilting force which is applied to the first gear during its operation from being transmitted to the second gear. A more complete understanding of the invention may be had by reading the paragraph bridging pages 13 and 14 in conjunction with Figure 1. Specifically the tiltable coupling formed by the insertion of the connecting shaft 38 into the connecting hole 34 prevents "the first helical gear 28 from receiving the effects of the tilting force, which the second worm gear 30 receives from the second helical gear 18. Accordingly, integral tilting of the first helical gear 28 with the second worm gear 30 can be suppressed...."

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Claim 1 has been amended to more specifically recite the tiltable coupling responsible for the advantages of the invention. Specifically, amended Claim 1 now recites a mirror device for a vehicle that comprises a first gear which is rotatable, a second rotatable gear, and

“a tiltable coupling connecting the first gear and the second gear so that the axis of rotation of one of said gears is tiltable with respect to the other, such that a tilt force applied to one gear is not transmitted to the other when the first gear is rotated, wherein the second gear is rotated integrally with the first gear, and a mirror for a vehicle is thereby rotated.”

None the references of record either discloses or suggests the mirror device recited in amended claim 1. In particular, neither the Mittelhauser '342, Stolpe '113, Mochizuki '641, nor the Kawahara '844 patents nor the Yamauchi '907 patent application discloses or suggests the specifically recited “tiltable coupling connecting the first gear and the second gear so that the axis of rotation of one of said gears is tiltable with respect to the other, such that a tilt force applied to one gear is not transmitted to the other ...” By contrast, all of the gears recited by the Examiner in the last Office Action are rigidly connected to one another. Hence, a tilt force applied to one will necessarily be transferred to the other. In the last Office Action, the Examiner cited first and second gears 13 and 18 with respect to the Mittelhauser '342 patent. However, component 13 is not a gear but rather a pivotal connection. Hence, there is no disclosure in this reference of a tiltable coupling that connects first and second gears; instead, there is only a disclosure of a pivotal joint 13 connected at the end of a helical gear 17 and a spindle 15. Accordingly, amended Claim 1 is clearly patentable over the '342 patent.

Similarly, with the Stolpe '113 patent there is no tiltable coupling that connects the gears 11 and 12 so that their axes of rotation are tiltable with respect to one another. The

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same is equally true of the gears 28 and 29 of the Mochizuki '071 patent, and to the gears 44 and 55 of the Kawahara '844 patent and gears 37a and 37b of the Yamauchi '907 patent application. Again, while the fork-style mounting of the gears 37a and 37b in this last reference may allow some tiltable movement of both of these gears simultaneously, there is no disclosure or suggestion of the recited "tiltable coupling connecting the first gear and the second gear so that the axis of rotation of one of said gears is tiltable with respect to the other..." For all these reasons, amended Claim 1 is clearly patentable over the cited references of record.

Claim 2 is patentable at least by reason of its dependency upon amended Claim 1.

Claim 3 has been amended so that its terminology is consistent with the new terminology added to amended Claim 1.

Claim 3 is likewise patentable at least by reason of its dependency on Claim 1.

As Claims 4-6 have previously been indicated as reciting patentable subject matter, no discussion of these claims is deemed necessary.

Claim 7 has been revised to more specifically recite which of the gears in the gear train is tiltable to the other gear. Claim 7 is patentable not only by reason of its dependency upon Claim 1, but for the recitation of these new limitations.

Claim 8 is patentable at least by reason of its dependency upon Claim 1.

Claim 9 has revised to recite substantially all the limitations present in amended Claim 1. Hence, Claim 9 is patentable for substantially the same reasons as amended Claim 1.

Claim 10 is patentable at least by reason of its dependency upon Claim 9.

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As Claims 11-14 have been indicated as reciting patentable subject matter, no further discussion of these claims is deemed necessary.


Claim 15 has also been amended to recite substantially the same limitation as amended Claim 1. Hence, this claim is patentable for substantially the same reasons given with respect to Claim 1.

Claim 16 is patentable at least by reason of its dependency upon claim 15.

As Claims 17-20 have been indicated as reciting patentable subject matter, no further discussion of these claims is deemed necessary.

Now that all the claims are believed to allowable, the prompt issuance of a Notice of Allowance and Issue Fee Due is hereby earnestly solicited.

Respectfully submitted,



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